El-Hayah

JURNAL BIOLOGI

Journal Homepage: http://ejournal.uin-malang.ac.id/index.php/bio/index

e-ISSN: 2460-7207, p-ISSN: 2086-0064

Original research article

Ethnobotany of Medicinal Plants by the Pasean District Community in Pamekasan Regency as Components of Postpartum Herbal Remedies

Eko Budi Minarno[1*], Zainabur Rahmah[1,2], Sitti Hamsiyatul Jannah[1]

[1]*Master of Biology Study Program, Faculty of Science and Technology,Universitas Islam Negeri Maulana Malik Ibrahim Malang, Indonesia*

[2]*Department of Parasitology, Faculty of Medicine and Health Sciences, Universitas Islam Negeri Maulana Malik Ibrahim Malang, Indonesia*

[*]*Corresponding author*

Email: budi_minarno@bio.uin-malang.ac.id

DOI: 10.18860/elha.v10i3.36427

Article Info

Article history:
Received 6 June 2025
Received in revised form 21 August 2025
Accepted 15 September 2025

Key Word:
Ethnobotany,
Phytochemistry,
Postpartum herbal remedies,
Medicinal plants

Abstract

Madurese people traditionally use medicinal plants to treat postpartum. To properly document local wisdom, it is important to investigate the ethnobotany of postpartum medicinal plants. The objectives are to determine the types of postpartum herbal medicines, the types of medicinal plants that compose them, plant organs, their applications, conservation strategies, and phytochemical content in the medicine. The exploratory descriptive research method used interviews and surveys. Sampling was done using a purposive sampling technique. The sample was divided into two. First, key informants include a) tokang jhemo (potion makers, namely mothers who understand the types of medicinal plants, types of postpartum potions, how to make them, serve potion orders and have used postpartum potions). b) dhukon rembik (traditional midwives, namely mothers who accompany and help in caring for mothers and their babies) as many as 6 people. Second, non-key informants consist of mothers who have just given birth and use postpartum potions as many as 8 people. Phytochemical tests in the Batu materia medica. Postpartum herbal remedies include: 40-day herbal medicine, labor herbal medicine, lepcellep, parem, turmeric and tamarind, postpartum herbal medicine, pejje, and pilis. Leaves are the most frequently used plant organ (35%). Triterpenoids, tannins/phenols, alkaloids, and flavonoids are all found in postpartum herbal remedies.

1. INTRODUCTION

Medicinal plants are used to treat or prevent a variety of illnesses because of their therapeutic qualities and uses. Active substances found in medicinal plants have the ability to heal particular illnesses or have the synergistic effects of other compounds with therapeutic benefits [1].

A popular natural remedy among the Madurese is jamu. For therapy, health maintenance, and fitness, the Madurese people often use medicinal plants in the form of jamu or mixtures [2]. Ethnobotany, a field of

biology, studies the link between humans and plants, including the Madurese people's use of medicinal plants [3].

Ethnobotanical research is important because it is useful in documenting community knowledge and local wisdom from a particular area that is starting to disappear. Documenting local community knowledge in utilizing plant resources will greatly assist in preserving biodiversity and domesticating valuable medicinal plants, thus playing a role in the conservation of biological resources **[4,5]**.

With 25 herbal medicine industries, Pamekasan Regency produces more traditional medicine in the form of herbal concoctions, known as jamu, than other regencies, according to data from **[6].** These herbal remedies for postpartum mothers include those that are meant to help them regain their energy or stamina after giving birth **[7],** increase the production of breast milk **[8]**, overcome psychological issues such as tension or anxiety in postpartum mothers **[9]**, remove postpartum blood until it is clean, avoid infection **[10]** (Fitriana *et al.,* 2018), and improve blood circulation **[11]**.

Because herbal remedies can help with psychological problems like anxiety or tension in postpartum moms, such as decreased breast milk production, stress, or depression, their use is more prevalent during the postpartum phase than during pregnancy and childbirth **[12]**.

Depending on the mother's capacity to adjust to both physical and psychological changes, postpartum symptoms might vary greatly. The mother's adjustment to her role is also influenced by her burden **[13]**. Madurese mothers have historically used local knowledge to foresee a variety of postpartum ailments, such as by giving postpartum mixtures prepared from regional medicinal herbs.

While some of these herbs are used internally, such by drinking them, others are utilized topically, like by applying them to the skin. Oral herbs include jamu buabuh, lepcelep, and bangkes, whereas external plants are referred to as parem. Some of the plants used as therapeutic supplements for postpartum mothers include betel (Piper betle), turmeric (*Curcuma longa*), temu kunci (*Boesenbergia rotunda),* temulawak *(Curcuma zanthorrhiza*), and coconut shell charcoal (*Cocos nucifera*). A tiny amount of salt is also used.

Some of these herbs are applied topically, such as by applying them to the skin, while others are used internally, such as by drinking them. Jamu buabuh, lepcelep, and bangkes are examples of oral herbs, whereas parem refers to external plants. Temu kunci (*Boesenbergia rotunda*), temulawak (*Curcuma zanthorrhiza*), turmeric (*Curcuma longa*), coconut shell charcoal (*Cocos nucifera*), betel (*Piper betle*), and a small amount of salt are some of the plants utilized as medicinal supplements for postpartum moms.

2. MATERIALS AND METHODS

Research Type

This research is descriptive and exploratory, employing survey methods and in-depth interviews. The approach used in this study is Participatory Ethnobotanical Appraisal (PEA), involving researchers in community activities involved in preparing postpartum herbal remedies.

The research's time and location

The study was carried out in Pasean District, Pamekasan Regency, East Java Province, in West Dempo Village, East Dempo Village, and Tlontoraja Village between March 10 and May 31, 2024. The postpartum herbal cocktail was subjected to phytochemical testing at Materia Medica in Batu City, East Java Province.

Both the population and the sample

The study's participants were the residents of Tlontoraja Village, West Dempo Village, and East Dempo Village in the Pamekasan Regency of the East Java Province. Both key informants and non-key informants were included in the

sample, which was made up of community people who were aware of and had utilized postpartum herbal medicines. Purposive sampling was the method used for sampling.

"*Tokang jhemo*" (a herbalist or herbalist, a woman who knows the kinds of medicinal plants and postpartum herbal treatments, knows how to manufacture them, takes orders for them, and has used them) is one of the key informants. b) dhukon rembik, a traditional midwife who attends to and assists in the care of mothers and their infants. Among the non-key informants are from mothers who are using or have used concoctions throughout the postpartum period, either after giving birth or recently.

Ethnobotanical Information

Six key informants and eight non-key informants were interviewed in-depth to collect ethnobotanical data on postpartum herbal medicine. Qualitative and quantitative techniques were used to tabulate and descriptively analyze the collected data. Types of herbal medicine, types of medicinal plants used as raw materials, organs of medicinal plants and their morphological characteristics, methods of using medicinal plants in postpartum herbal medicine, conservation measures for medicinal plants, and phytochemical content were among the qualitative data gathered from community interviews. Both the percentage of medicinal plant parts and the percentage of medicinal plant species utilized as raw materials for external and internal (oral) herbal therapy were quantitatively recorded.

Testing for phytochemicals

Put two grams of herbal extract and twenty milliliters of distilled water into a beaker. Pour into two test tubes after heating for approximately 15 minutes on a Bunsen burner. Divide the sample into four for triterpenoid, phenol, alkaloid and flavonoid analysis. Triterpenoid (Liebermann–Burchard Test), Phenol Test (Reaction test with $FeCl_3$ (iron(III) chloride), Alkaloid Test (Reaction with Dragendorff, Mayer, or Wagner reagent), Flavonoid Test (Shinoda Test or Metal Staining Test).

3. RESULTS

Eight postpartum herbal remedies and 25 plant species are used in postpartum herbal remedies in Pasean District, Pamekasan Regency, according to Table 1, which is based on interviews with six key informants and eight non-key informants from three villages: East Dempo, West Dempo, and Tlontoraja.

According to Figure 1, turmeric (*Curcuma longa*) is the species most frequently employed in postpartum herbal medicines, accounting for 14% of the total, as seen in the graph in Figure 1 below.

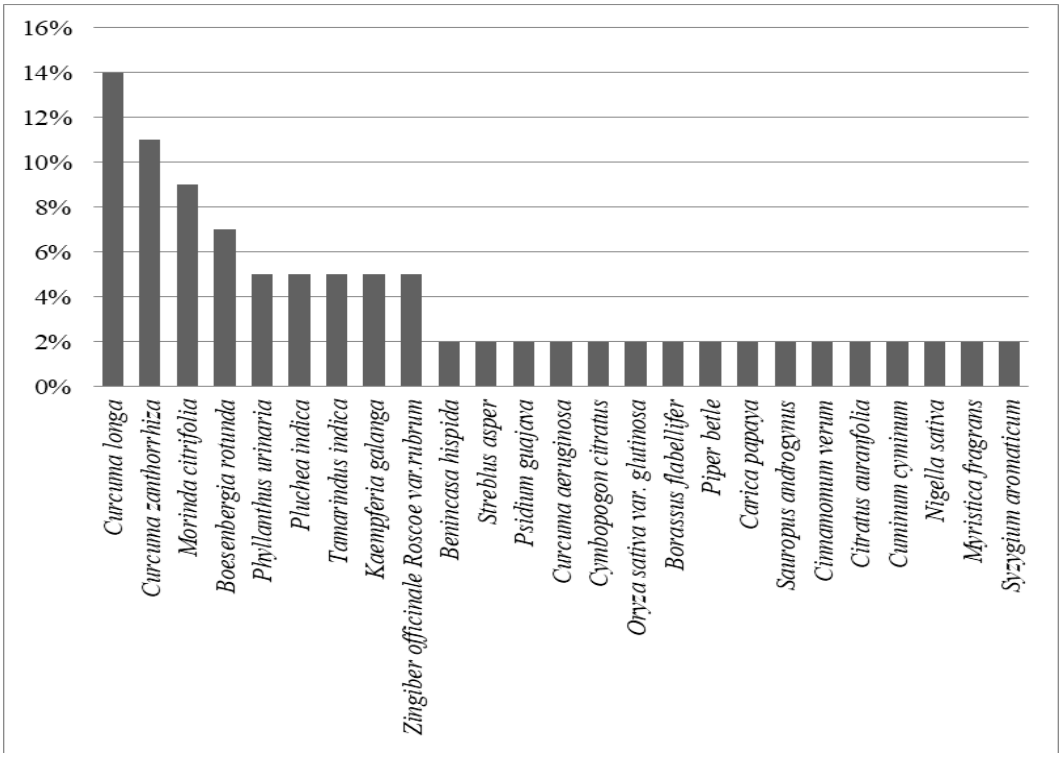

Figure 1. Percentage of medicinal plant species used as postpartum herbal remedies

Table 1. Data on Types of Herbal Remedies and Medicinal Plants Postpartum Treatment by the Pamekasan Regency Community

No	Types of Herbs	Types of Medicinal Plants		Benefit*	Description (internal/external herbs)
		Local Name	Scientific Name		
1	40 days herbal medicine	Meniran leaf	*Phyllanthus urinaria*	Refreshes the body and promotes breast milk	Internal ingredients
		Temulawak	*Curcuma zanthorrhiza*		
		Kunyit	*Curcuma longa*		
		Mengkudu leaf	*Morinda citrifolia*		
		Gourd leaves and shoots	*Benincasa hispida*		
		Serut leaf	*Streblus asper*		
2	Herbal medicine for childbirth	Temulawak leaf	*Curcuma zanthorrhiza*	Makes the body healthy, restores the uterus to its pre-pregnancy state, cleanses white blood cells, and speeds up the wound healing process.	Internal ingredients
		Kunyit	*Curcuma longa*		
		Temu kunci	*Boesenbergia rotunda*		
		Jambu leaf	*Psidium guajava*		
		Temu ireng	*Curcuma aeruginosa*		
3	Lepcellep	Beluntas	*Pluchea indica*	Eliminates white blood cells,	Internal ingredients
		Kunyit	*Curcuma longa*		

		Mengkudu	*Morinda citrifolia*	accelerates the wound healing process, and increases breast milk production.	
		Temulawak	*Curcuma zanthorrhiza*		
		Asam jawa	*Tamarindus indica*		
4	Parem	Serai	*Cymbopogon nardus L*	Accelerates wound healing, improves sleep quality, improves blood circulation, and cleanses the skin	Internal ingredients
		Ketan putih	*Oryza sativa* var. glutinosa		
		Kencur	*Kaempferia galanga*		
		Mengkudu	*Morinda citrifolia*		
		Jahe merah	*Zingiber officinale* Roscoe var.rubrum		
5	Kunyit asam	Kunyit	*Curcuma longa*	Reduces abdominal pain and tightens the mother's stomach	Internal ingredients
		Gula merah	*Borassus flabellifer*		
		Asam jawa	*Tamarindus indica*		
6	Jamu nifas	Temu kunci	*Boesenbergia rotunda*	Eliminates vaginal discharge, accelerates wound healing, and increases breast milk production.	Internal ingredients
		Temulawak	*Curcuma zanthorrhiza*		
		Kunyit	*Curcuma longa*		
		Sirih	*Piper betle*		
7	Pejje	Papaya	*Carica papaya*	a. Increase breast milk productio n	Internal ingredients
		Katuk leaf	*Sauropus androgynous*		
		Meniran	*Phyllanthus urinaria*		
		beluntas leaf	*Pluchea indica*		
		Mengkudu	*Morinda citrifolia*		
		Temulawak	*Curcuma zanthorrhiza*		
		Temu kunci	*Boesenbergia rotunda*		
8	Pilis	Kayu manis	*Cinnamomum verum*	Improve blood circulation and Relieve headaches	External herbs
		Jeruk nipis	*Citrus aurantifolia*		
		Jintan putih	*Cuminum cyminum*		
		Jintan hitam	*Nigella sativa*		
		Kunyit	*Curcuma longa*		
		Kencur	*Kaempferia galanga*		

Pala	*Myristica fragrans*
Cengkeh	*Syzygium aromaticum*
Jahe merah	*Zingiber officinale* Roscoe var.rubrum

Description: Internal herbal is an external herbal drink that is used as a body scrub

The percentage of the most used plant species indicates that these plants are more frequently used and their benefits are more widely known by the public. Natural conditions, such as the presence of forests, also influence the percentage of medicinal plants used **[14].** Turmeric is the most widely used medicinal plant because it is more readily available and more widely known for its medicinal properties.

The results of the study showed that the plant organs used to make postpartum potions by the people of Pasean District, Pamekasan Regency are the seeds, fruit, flowers, leaves, stems, bark/wood, and rhizomes.

How to Utilize Medicinal Plant Organs as Postpartum Herbal Ingredients by the Community of Pasean District, Pamekasan Regency

Based on the results of interviews and observations with the community in Pasean District, Pamekasan Regency, the method of using plants for postpartum herbal remedies is shown in Table 2.

Table 2. How Medicinal Plants Are Used for Postpartum Remedies by the Pamekasan Regency Community

No.	Types of Herbs	Ways of making	How to use
1	40 days herbal medicine	Grind all ingredients until smooth, then strain and take the juice, then add water.	Drink 2 times a day
2	Herbal medicine for childbirth	All ingredients are sliced thinly, then dried and once dry, ground until smooth.	Brew with warm water and drink 2 times a day
3	Lepcellep	Noni, Javanese ginger, and turmeric are thinly sliced, then all the ingredients are boiled, including beluntas and tamarind, until boiling.	Drink 2 times a day
4	Parem	All ingredients are ground, then rolled into balls and dried in the sun until dry.	When you want to use it, mix it with warm water and apply it to the body.
5	Kunyit asam	Blend the turmeric until smooth, then strain it to get the juice, then boil it until it boils by adding sugar and tamarind.	Drink 2 times a day
6	Postpartum herbal medicine	All ingredients are thinly sliced and then boiled until boiling.	Drink 2 times a day
7	Pejje	All ingredients are dried and then ground until smooth.	Brewed with hot water and drunk twice a day
8	Pilis	All the ingredients are ground, then made into balls, and then dried in the sun until dry.	Pilis dots are mixed with hot water and then rubbed on the forehead

Source: Primary data

Organs of medicinal plants are pounded, mashed/powdered, and boiled as components for postpartum herbal medicines (Table 3). To make the therapeutic substances in postpartum herbal treatments easier to absorb into the skin when applied and simpler to digest when consumed, they are pounded, ground, and boiled. Since water is a good solvent, the boiling process's goal is to extract or pull out the medicinal plants' active ingredients [15].

There are two categories of postpartum herbal medicines in Pasean District, Pamekasan Regency: internal and exterior. Lepcellep, turmeric and tamarind, postpartum herbal medicine, pejje, 40-day herbal medicine, and newborn herbal medicine are examples of internal medicines that are taken orally. Parem and pilis are examples of external medicines that are used topically (combined with a little hot water).

Medicinal Plant Conservation Measures by the Pasean District Community in Pamekasan Regency as Components of Postpartum Herbal Remedies.

According to the study's findings, there are three ways to get the raw ingredients for postpartum herbal remedies: buying them from markets or medicinal plant growers, producing them yourself, or getting them from the natural world. People cultivate medicinal plants in their yards, in pots or polybags, or by growing them themselves. They get them from untamed plants that grow in highlands or jungles. Figure 2 shows the fraction of raw materials acquired for herbal medicines used after childbirth

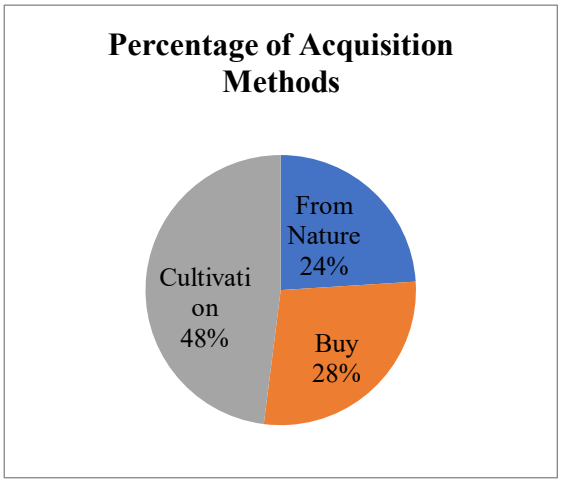

Figure 2. Percentage of methods used to obtain medicinal plants

Figure 2 shows that growing or planting oneself accounts for 48% of the techniques used to obtain raw materials for postpartum herbal medicines, with purchasing coming in second at 28% and nature at 24%. Because the residents of Pasean District, Pamekasan Regency, grow family medicinal plants, it is evident that raw materials for herbal treatments are readily available in people's yards.

In their yards (TOGA). The community grows its own medicinal plants so they are readily available when needed. This illustrates the community's understanding of the value of protecting the medicinal plants they utilize and their capacity to transmit information about their therapeutic advantages from one generation to the next.

Figure 3. Methods for preserving plants as raw materials for postpartum herbal remedies. (A) In-situ conservation, (B) Planting in polybags/flowerpots, (C) Planting in the yard

Phytochemical Compound Content of Postpartum Herbal Remedies by the Community of Pasean District, Pamekasan Regency

Phytochemical tests were carried out to identify the content of secondary metabolite compounds found in the internal and external postpartum herbal remedies utilized by the community in Pasean District, Pamekasan Regency. Phytochemical tests can be conducted qualitatively using reagents to produce color changes and sediment in sample extracts. The results of the qualitative phytochemical tests are listed in Table 3 below

Table 3. Phytochemical Content of Postpartum Herbal Remedies by the Pamekasan Regency Community

No.	**Inner Herbal Name: Childbirth Herbal Medicine**		**Phytochemical Content**
	Nama Lokal Tumbuhan Obat Bahan Ramuan	**Scientific Name**	
1	Temulawak	*Curcuma zanthorrhiza*	Flavonoid, alkaloid, tanin/fenol, and triterpenoid
	Kunyit	*Curcuma longa*	
	Temu kunci	*Boesenbergia rotunda*	
	Jambu Leaf	*Psidium guajava*	
	Temu ireng	*Curcuma aeruginosa*	
No.	**Name of the Internal Ingredients: Pejje**		**Phytochemical Content**
	Local Names of Medicinal Plants and Herbal Ingredients	**Scientific Name**	
2	Papaya leaves	*Carica papaya*	Flavonoid, alkaloid, tanin/fenol, dan steroid
	Katuk leaves	*Sauropus androgynous*	
	Meniran leaves	*Phyllanthus urinaria*	
	Beluntas leaves	*Pluchea indica*	
	mengkudu fruit	*Morinda citrifolia*	
	Temulawak	*Curcuma zanthorrhiza*	
	Temu kunci	*Boesenbergia rotunda*	
No.	**Name of the Internal Ingredients: Pilis**		**Phytochemical Content**
	Local Names of Medicinal Plants and Herbal Ingredients	**Scientific Name**	

3	Kayu manis	*Cinnamomum verum*	Flavonoid, tanin/fenol, dan steroid
	Jeruk nipis	*Citrus aurantifolia*	
	Jintan putih	*Cuminum cyminum*	
	Jintan hitam	*Nigella sativa*	
	Kunyit	*Curcuma longa*	
	Kencur	*Kaempferia galanga*	
	Pala	*Myristica fragrans*	
	Cengkeh	*Syzygium aromaticum*	
	Jahe merah	*Zingiber officinale* Roscoe var.rubrum	
No.	**External Herbal Name: Parem** **Local Names of Medicinal Plants and Herbal Ingredients**	**Scientific Name**	**Phytochemical Content**
4	Serai	*Cymbopogon nardus L*	Flavonoid, tanin/fenol, dan steroid
	Ketan putih	*Oryza sativa* var. glutinosa	
	Kencur	*Kaempferia galanga*	
	Mengkudu	*Morinda citrifolia*	
	Jahe merah	*Zingiber officinale* Roscoe var.rubrum	

4. Discussion

Based on Table 3 above, the phytochemical compounds in herbal birth remedies include flavonoids, alkaloids, tannins/phenols, and triterpenoids. This is because black ginger, one of the ingredients in herbal birth remedies, contains triterpenoids and flavonoids. Black ginger contains triterpenoids **[16]** and flavonoids, which function as antioxidants and antimicrobials **[17].** Black ginger contains the phytochemical compounds terpenoids and curcumin **[18]**.

Flavonoids, alkaloids, essential oils, curcumin, tannins, terpenoids, and saponins are among the phytochemical chemicals found in turmeric **[19**, terpenoids, flavonoids, phenols, and quinones are all found in ginger **[20]**, tannins, phenols, and saponins are all present in dried guava leaves **[21].** Phytochemical substances found in pejje include alkaloids, tannins/phenols, steroids, and flavonoids. This is so because the leaves of papayas, katuk, meniran, beluntas, noni, ginger, and temu kunci are used to make pejje. Alkaloids, saponins, flavonoids, terpenoids, and tannins are among the chemical substances found in papaya leaves that have antibacterial, antifungal, antiseptic, and anti-inflammatory properties **[22].** Alkaloids, triterpenoids, saponins, glycosides, and flavonoids are all found in katuk leaves **[23].** Flavonoids, terpenes, coumarins, lignans, tannins, saponins, and alkaloids are among the phytochemical substances found in meniran leaves **[24]**.

Phytochemical substances found in pejje include alkaloids, tannins/phenols, steroids, and flavonoids. This is so because the leaves of papayas, katuk, meniran, beluntas, noni, ginger, and temu kunci are used to make pejje. Alkaloids, saponins, flavonoids, terpenoids, and tannins are among the chemical substances found in papaya leaves that have antibacterial, antifungal, antiseptic, and anti-inflammatory properties **[25].** Alkaloids, triterpenoids, saponins, glycosides, and flavonoids are all found in katuk leaves **[26].** Flavonoids, terpenes, coumarins, lignans, tannins, saponins, and alkaloids are among the phytochemical substances found in meniran leaves **[27]**.

The phytochemical compounds in pilis include flavonoids, tannins/phenols, and steroids, due to the plant components that make up the pilis herb. Cinnamon contains phenolic and flavonoid phytochemicals.

Cinnamon exhibits high biological activity, acting as an analgesic, antibacterial, antidiabetic, antifungal, antioxidant, antirheumatic, antithrombotic, and antitumor agent **[28].** Cinnamon's anti-inflammatory and analgesic properties can aid in wound healing and reduce pain **[29]**.

Alkaloids, flavonoids, tannins, and phenols are all found in lime juice **[30].** Cumin has antibacterial, antifungal, anti-inflammatory ,antidiabetic, immunomodulatory, and insecticidal properties. One of cumin's phytochemical compounds is essential oil. The antioxidant activity of cumin essential oil is favorably connected with its phenol concentration. Numerous Candida infections are killed by essential oil's potent antifungal qualities. By altering T lymphocyte expression, cumin treatment dramatically raises CD4 and CD8 (T cell) numbers **[31].**

According to **[32],** black cumin includes terpenoids, flavonoids, tannins, alkaloids, saponins, steroids, and triterpenoids, all of which have antibacterial properties. Flavonoids, steroids, tannins, sesquiterpenes, and monoterpenes are examples of secondary metabolites found in galangal rhizomes **[33].** Alkaloids, flavonoids, saponins, tannins, and terpenoids are all found in nutmeg seeds. Alkaloids and flavonoids, two antimicrobial substances, are found in nutmeg seeds. Saponins and tannins have wound-healing properties, while terpenoids have antioxidant properties **[34].** Alkaloids, glycosides, flavonoids, phenols, saponins, tannins, and essential oils are all found in clove blossoms **[35].**

Because of the components utilized in its creation, parem is an external herbal treatment that contains flavonoids, tannins/phenols, and steroids. Parem has the ability to tighten, smooth, and give off a pleasant feeling. Parem's primary ingredient is white glutinous rice. In addition to vitamins C, E, B1, B6, and B12, which can help smooth, brighten, and heal damaged skin cells, white glutinous rice flour contains collagen, which can preserve skin suppleness. White glutinous rice flour also contains squalene oil **[36].** Alkaloids, flavonoids, tannins, saponins, and triterpenoids are all found in lemongrass stalks **[37].** Alkaloids, flavonoids, terpenoids, saponins, and tannins are among the phytochemical substances found in red ginger **[38]**.

The phytochemical substances in the postpartum herbal samples were not consistent, as Table 3 demonstrates. There were flavonoid phytochemicals in every sample. The most prevalent phenolic chemicals found in nature are flavonoids. Different levels of hydroxylation, alkoxylation, and glycosylation in their structures account for the diversity of flavonoid molecules. According to **[39],** flavonoids comprise a basic carbon skeleton made up of 15 carbon atoms organized in the C6-C3-C6 structure.

By acting as antioxidants and scavengers of free radicals, flavonoid compounds can help postpartum moms' immunity **[40].** By preventing the production of the hormone oxytocin, flavonoids—compounds with antioxidant qualities—help avoid stress. Additionally, these substances function as vasodilators, which promote the circulation of oxytocin and blood flow. Flavonoids also have the capacity to lessen the body's production of free radicals. These free radicals can harm cells and result in infection if they are not addressed. According to **[41],** this infection can impede the process of uterine involution by causing bleeding from the placental implantation incision in the uterine wall as a result of bacterial and microbe infiltration.

Alkaloid chemicals are found in pejje and birthing herbal medicine. One of the most important secondary metabolites in plants is alkaloids. Alkaloids are usually found in nature as mixes made up of a few major alkaloids and trace amounts of other alkaloids; they are never isolated **[42].** Through their capacity to relax smooth muscle and dilate blood vessels, alkaloids (papaverine) have the potential to boost the expression of the genes for prolactin

and oxytocin. This would ultimately facilitate the circulation of prolactin and oxytocin hormones in the bloodstream. Papaverine stimulates prolactin release by blocking dopamine receptors, despite the fact that dopamine is known to limit prolactin release. The production of breast milk depends on prolactin **[43].**

Tannins and phenols are found in all herbs. Phenolic substances called tannins are known to give food an astringent and bitter flavor. These substances can cause coagulation when they combine with proteins or other organic substances that contain alkaloids and amino acids [42].

Tannins can create cross-links with proteins and other molecules such polysaccharides, amino acids, fatty acids, and nucleic acids because they contain a large number of phenolic hydroxy groups. Bacterial cells lyse as a result of tannins attacking their polypeptide walls, which leads to imperfect cell wall development. Tannin works as an antimicrobial through this mechanism [44]. Tannin speeds up the healing of perineal lesions because it is also an antioxidant [45].

Herbal remedies for childbirth are the only ones that contain triterpenoid chemicals. Triterpenoids are terpenoids' secondary metabolites. Six isoprene units (2-methylbutyl-1,3-diene), a C30 acyclic hydrocarbon, squalene, are the source of its six-unit C5 structure. These substances can be cyclic or acyclic and frequently contain carboxylic acid, alcohol, or aldehyde groups. According to [46], triterpenoids have a number of significant pharmacological properties, such as antiviral, antibacterial, anti-inflammatory, cholesterol synthesis inhibitory, and anticancer properties.

5. Conclusion

Based on the research results, it can be concluded that:

1. There are eight postpartum herbal concoctions: 40-day herbal concoction, birth herbal concoction, lepcellep, parem, turmeric and tamarind, postpartum herbal concoction, pejje, and pilis. The medicinal plant species used as raw materials for postpartum concoctions by the people of Pasean District, Pamekasan Regency, comprise 25 species. The organs used as ingredients for postpartum herbal remedies by the people of Pasean District, Pamekasan Regency include leaves (35%), rhizomes (23%), seeds (15%), fruit (11%), flowers (8%), and stems (bark) (8%). Criteria for each organ used as a postpartum herb including young and not too old leaves, physiologically ripe, fresh and large rhizomes, old seeds, unripe and ripe fruit, unopened flowers, and hard and distinctive smelling stems (bark).
2. Conservation measures for medicinal plants used by the people of Pasean District, Pamekasan Regency, as ingredients for postpartum herbal remedies. These include simple cultivation, such as planting them in the yard or in flower pots or polybags, and refraining from taking advantage of medicinal plants that grow naturally as ingredients for postpartum herbal remedies.
3. Residents of Pasean District, Pamekasan Regency, employ the following postpartum herbal remedies: A herbal remedy that contains triterpenoids, alkaloids, tannins/phenols, and flavonoids. 2) Pejje contains steroids, tannins/phenols, alkaloids, and flavonoids. 3) Steroids, tannins, and phenols are all present in pilis. 4) Parem includes steroids, flavonoids, and tannins/phenols.

6. REFERENCES

[1]. Sarno. (2019). Pemanfaatan Tanaman Obat (Biofarmaka) Sebagai Produk Unggulan Masyarakat Desa Depok Banjarnegara. *Abdimas Unwahas*, *4*(2), 73–78. https://doi.org/10.31942/abd.v4i2.3007.

[2]. Selvianti, D., & Widyaningsih, S. (2022). Gambaran Kebersihan Diri terhadap Pencegahan Infeksi Masa Nifas di BPM Wilayah Kerja Kota Bengkulu. *Journal of Midwifery*, *10*(1), 8–12.

[3]. Ziraluo, Y. P. B. (2020). Tanaman Obat

Keluarga dalam Perspektif Masyarakat Transisi (Studi Etnografis pada Masyarakat Desa Bawodobora). *Jurnal Inovasi Penelitian*, *1*(2), 99–106.

[4]. Kandari, L. S., Phondani, P. C., Payal, K. C., Rao, K. S., & Maikhuri, R. K. (2012). Ethnobotanical study towards conservation of medicinal and aromatic plants in upper catchments of Dhauli Ganga in the central Himalaya. *Journal of Mountain Science*, *9*(2), 286–296. https://doi.org/10.1007/s11629-012-2049-7.

[5]. Tamin, R. P., Angraini, R., & Ulfa, M. (2017). Penyuluhan dan Pelatihan Eksplorasi Botani Hutan dalam Upaya Konservasi Hutan. *Jurnal Karya Abdi Jaya*, *01*(2), 119–128. http://www.albayan.ae.

[6]. Helmi, B. S., Hidayat, K., & Fakhry, M. (2019). Pengaruh Undang Undang Jaminan Produk Halal Terhadap Pengembangan Produk Jamu Madura. *Jurnal Pamator*, *Vol.12*(2), 100–107

[7]. Agustina, Z. A., & Fitrianti, Y. (2020). Utilization of Jamu in Puerperal Mother in Sumatera and Java Island (Literature Review of Health Ethnographic Research 2012-2016). *Indonesian Journal of Public Health*, *15*(1), 93–102. https://doi.org/10.20473/ijph.v15i1.2020.93-102.

[8] Yulianty, Y., Virati, D. I., & Suryani, H. (2023). Pengaruh Pemberian Jamu Pelancar Air Susu Ibu (JALASI) terhadap Kelancaran Air Susu Ibu (ASI) pada Ibu Nifas di Wilayah Kerja Puskesmas Bumi Rahayu Kecamatan Tanjung Selor. *Aspiration of Health Journal*, *01*(01), 563–569.

[9]. Febrianti, S. (2019). Perawatan Tradisional Pada Depresi Postpartum. *Journal of Borneo Holistic Health*, *2*(1), 74–83. https://doi.org/10.35334/borticalth.v2i1.663

[10]. Fitriana, W. D., Istiqomah, S. B. T., Ersam, T., & Fatmawati, S. (2018). The Relationship of Secondary Metabolites : A Study of Indonesian traditional herbal medicine (Jamu) for post-partum maternal care use. *AIP Conf. Proc.*, *2049*(1), 1–8.

[11]. Peli, Linda, R., & Wardoyo, E. R. P. (2020). Pemanfaatan Tumbuhan Obat Bagi Ibu Sebelum Dan Sesudah Melahirkan Pada Masyarakat Suku Melayu Di Desa Sekura Kabupaten Sambas. *Jurnal Protobiont*, *9*(3), 236–245. https://jurnal.untan.ac.id/index.php/jprb/article/download/49944/75676590852

[12]. Pratiwi, L., Rachman, M. S., & Hidayati, N. (2016). Ektraksi Minyak Atsiri Dari Bunga Cengkeh Dengan Pelarut Etanol Dan N-Heksana. *The 3rd Universty Research Coloquium*, *2*(1), 655–661. https://publikasiilmiah.ums.ac.id/bitstream/handle/11617/6778/18. Luluk Pratiwi%2C Muhammad Saifur Rachman%2C Dan Nur Hidayati.pdf?sequence=1&isAllowed=y

[13]. Schwedhelm, C., Lipsky, L. M., Temmen, C. D., & Nansel, T. R. (2022). Eating Patterns during Pregnancy and Postpartum and Their Association with Diet Quality and Energy Intake. *Nutrients*, *14*(6), 1–16. https://doi.org/10.3390/nu14061167

[14]. Pujihastuti, L. S., Tanzerina, N., & Aminasih, N. (2020). Studi Etnobotani Tumbuhan Obat Suku Anak Dalam di Desa Sungai Jernih Kecamatan Rupit Kabupaten Musi Rawas Utara Sumatera Selatan. *SRIBIOS: Sriwijaya Bioscientia*, *1*(2), 23–31.

[15]. Ani, N., Sukenti, K., Aryanti, E., & Rohyani, I. S. (2021). Ethnobotany Study of Medicinal Plants by the Mbojo Tribe Community in Ndano Village at the Madapangga Nature Park, Bima, West Nusa Tenggara. *Jurnal Biologi Tropis*, *21*(2), 456–469.

[16]. Nurcholis, W., Marliani, N., Adam, F., Da'inawari, K., Mukti, S. F., Sudarjat, K. S. A., & Utami, T. R. (2023). Uji Sitoksisitas, Fitokimia Kualitatif, dan Antibakteri pada Lima Genotipe Rimpang Temu Hitam (Curcuma aeruginosa Roxb). *Justek : Jurnal Sains Dan Teknologi*, *6*(1), 01–11.

https://doi.org/10.31764/justek.v6i1.12303

[17]. Sari, A. M., & Cikta, E. V. (2016). Ekstraksi flavonoid dari temu ireng (Curcuma aeruginosa Roxb) dan Aplikasinya pada Sabun Transparan. *Konversi*, *5*(1), 17–23. https://doi.org/10.24853/konversi.5.1.17-23

[18]. Rahmat, E., Lee, J., & Kang, Y. (2021). Javanese Turmeric (Curcumaxanthorrhiza Roxb.): Ethnobotany, Phytochemistry, Biotechnology, and Pharmacological Activities. *Evidence-Based Complementary and Alternative Medicine*, 1–15. https://doi.org/10.1155/2021/9960813

[19]. Wijaya, F. L., Suwitono, M. R., & Sulastri, T. (2022). Determination of Antioxidant Activity and Shelf-Life Test of Turmeric (Curcuma longa) Fortified Bread. *8ISC Proceedings: Sciences*, 48–54. http://ejournal.unklab.ac.id/index.php/8ISCSC/article/view/675

[20]. Priyadi, M., Chusna, N., Isnawati, & Indriani, O. (2021). Profil Fitokimia Ekstrak Etil Asetat Temu Kunci (Boesenbergia rotunda L.) dan Serai (Cymbopogon citratus). *Jurnal Pharmascience*, *8*(1), 45–52.

[21]. Simbolon, R. A., Halimatussakdiah, & Amna, U. (2021). Uji Kandungan Senyawa Metabolit Sekunder pada Ekstrak Daun Jambu Biji (Psidium guajava L var. Pomifera) dari Kota Langsa, Aceh. *Quimica: Jurnal Kimia Sains Dan Terapan*, *3*(1), 12–18. https://doi.org/10.33059/jq.v3i1.3493

[22]. Marpaung, J. K., Suryani, M., & Purba, I. E. (2022). Anti-Bacterial Activity Test of Ethanol Extract of Papaya Leaves (Carica papaya L) on the Growth of Staphylococcus epedermidis. *Jurnal EduHealth*, *13*(02), 558–563. https://ejournal.seaninstitute.or.id/index.php/healt/article/view/658

[23]. Syahadat, A., & Siregar, N. (2020). Skrining Fitokimia Daun Katuk (Sauropus androgynus) Sebagai Pelancar Asi. *Jurnal Kesehatan Ilmiah Indonesia*, *5*(1), 85–89.

[24]. Dahanayake, J. M., Perera, P. K., Galappaththy, P., & Arawwawala, M. (2020). A mini-review on therapeutic potentials of phyllanthus niruri linn. *Trends in Phytochemical Research*, *4*(3), 101–108.

[25]. Marpaung, J. K., Suryani, M., & Purba, I. E. (2022). Anti Bacterial Activity Test of Ethanol Extract of Papaya Leaves (Carica papaya L) on the Growth of Staphylococcus epedermidis. *Jurnal EduHealth*, *13*(02), 558–563. https://ejournal.seaninstitute.or.id/index.php/healt/article/view/658

[26]. Syahadat, A., & Siregar, N. (2020). Skrining Fitokimia Daun Katuk (Sauropus androgynus) Sebagai Pelancar Asi. *Jurnal Kesehatan Ilmiah Indonesia*, *5*(1), 85–89.

[27]. Dahanayake, J. M., Perera, P. K., Galappaththy, P., & Arawwawala, M. (2020). A mini-review on therapeutic potentials of phyllanthus niruri linn. *Trends in Phytochemical Research*, *4*(3), 101–108.

[28]. Susilowati, R., & Setiawan, A. M. (2020). Cinnamomum burmannii (Nees & T. Nees) Blume and Eleutherine palmifolia (L.) Merr. extract combination ameliorate lipid profile and heart oxidative stress in hyperlipidemic mice. *Veterinary World*, *13*(7), 1404–1409. https://doi.org/10.14202/vetworld.2020.1404-1409

[29]. Wulandari, E. T., & Kumalasari, D. (2017). Herbal untuk Perawatan Masa Nifas; Penggunaan Kayu Manis untuk Nyeri Perineum dan Luka Episiotomi. *Aisyah : Jurnal Ilmu Kesehatan*, *2*(2), 92–98. https://doi.org/10.30604/jika.v2i2.40

[30]. Bawekes, S. M., Yudistira, A., & Rumondor, E. M. (2023). Uji Kualitatif Kandungan Senyawa Kimia Perasan Jeruk Nipis (Citrus aurantifolia Swingle). *Pharmacon*, *12*(3), 373–377. https://doi.org/10.35799/pha.12.2023.49269

[31]. Allaq, A. A., Sidik, N. J., Abdul-Aziz, A., & Ahmed, I. A. (2020). Cumin (Cuminum cyminum L.): A Review of Its Ethnopharmacology, Phytochemistry.

Biomedical Research and Therapy, *7*(9), 4016–4021. https://doi.org/10.15419/BMRAT.V7I9.634

[32]. Hidayat, L. N. R., Riyadi, S. A., Gustiani, S., & Dwicahya, A. (2022). Application of Black Cumin Extract (Nigella sativa L.) As An Antibacterial Agent on Cotton Fabrics with Various Methods. *Arena Tekstil*, *37*(1), 9–18.

[33]. Soniman, M., Syaputra, D., & Kurniawan, A. (2022). Efektivitas Senyawa Aktif Kombinasi Kencur Kaempera galanga dan Ilalang Imperata cylindrica Secara In Vitro Terhadap Bakteri Gram Positif dan Bakteri Gram Negatif. *Journal of Aquatropica Asia*, *7*(1), 19–33.

[34]. Abdulkadir, W. S., Djuwarno, E. N., Papeo, D. P., & Marhaba, Z. (2023). Potensi Ekstrak Biji Pala (Myristica fragrans L) Terhadap Penyembuhan Luka Bakar pada Mencit (Mus musculus). *Journal Syifa Sciences and Clinical Research*, *5*(1), 123–131. https://doi.org/10.37311/jsscr.v5i1.18996

[35]. Mustapa, M. A. (2020). Penelusuran Senyawa Tumbuhan Cengkeh. In *Perpustakaan Nasional RI*. Media Madani. https://repository.ung.ac.id/get/karyailmiah/5410/Buku-Penelusuran-Senyawa-Tumbuhan-Cengkeh.pdf

[36]. Suryadi, A. F., & Suhartiningsih. (2019). Pengaruh Proporsi Tepung Ketan Putih (Oryza sativa L. Var glutinosa) dan Tepung Pepaya (Carica papaya) terhadap Sifat Fisik Masker Wajah Tradisional. *Jurnal Pendidikan Tata Rias*, *8*(2), 1–9.

[37]. olekha, R., Setiyowati, P. A. I., Kusumanegara, S. B. S. M., & Sari, C. T. U. (2022). Phytochemical Screening of Ethanol Extract on Stems, Leaves, and Roots of Citronella Grass (Cymbopogon nardus L.) Rofiatun. *BEST JOURNAL (Biology Education, Science, & Technology)*, *5*(1), 141–147

[38]. Srikandi, Humiroh, M., & Sutamihardja, R. (2020). Kandungan Gingerol Dan Shogaol Dari Ekstrak Jahe Merah (Zingiber Officinale Roscoe) Dengan Metode Maserasi Bertingkat. *Al-Kimiya*, *7*(2), 75–81. https://doi.org/10.15575/ak.v7i2.6545

[39]. Julianto, T. S. (2019). *Fitokimia Tinjauan Metabolit Sekunder dan Skrining Fitokimia*. Universitas Islam Indonesia.

[40]. Septiani, C., Widyawati, M. N., Kurnianingsih, Sudiyono, & Susanto, E. (2024). *Peningkatan Imunitas Ibu Nifas Melalui Senyawa Flavonoid Hasil Ektraksi (Citrus limon) Menggunakan Teknologi Ultrasound Assisted Extraction*. *6*(1), 208–216. https://doi.org/10.31539/joting.v6i1.5256

[41]. Pelupessy, N., Buamona, S. A. M. U., & Wakano, M. (2024). Pengaruh Oukup pada Ibu Nifas terhadap Involusi Uteri di Kabupaten Maluku Tengah. *Jurnal Ilmiah Kesehatan Diagnosis*, *19*(1), 1–5.

[42]. Julianto, T. S. (2019). *Fitokimia Tinjauan Metabolit Sekunder dan Skrining Fitokimia*. Universitas Islam Indonesia.

[43]. Handayani, S., & Fatmawati, N. (2022). Phytochemical Screening Of Alkaloid And Steroid Compounds On Katuk Leaf (Sauropus androgynus (L.) Merr) As An Effort To Increase Breast Milk Production. *Journal of Midwifery Malahayati*, *8*(1), 196–200. https://doi.org/10.33024/jkm.v8i1.5573

[44]. Syahmani, Leny, & Iriani, R. (2022). *Fitokimia dan Aplikasinya*. Lambung Mangkurat University Press.

[45]. Aryantini, D. (2021). Aktivitas Antioksidan Dan Kandungan Tanin Total Ekstrak Etanol Daun Kupu-Kupu (Bauhinia purpurea L.). *Jurnal Farmagazine*, *8*(1), 54–60.

[46]. Hidayah, H., Nurfirzatulloh, I., Insani, M., & Shafira, R. A. (2023). Literature Review Article : Aktivitas Triterpenoid Sebagai Senyawa Antiinflamasi Himyatul. *Jurnal Ilmiah Wahana Pendidikan*, *9*(16), 430–436